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U.S. ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND DIVISION
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604



November 1, 2001

VIA FACSIMILE (630) 231-3990 AND U.S. MAIL

Mr. Bernard Bono
Kerr-McGee Chemical, LLC
800 Weyrauch Street
West Chicago, Illinois 60185

RE: Investigation Work Plan, DuSable Park, Chicago, Illinois, October 4, 2001

Dear Mr. Bono:

U.S. EPA has reviewed the above document and requests the following changes:

Scope and Objectives, para. 3—Commit to soil concentration measurements. These are essential to the investigation.

Scope and Objectives, para. 4—Gamma logging to two feet is insufficient for this investigation. Measurements, made along the southern slope at the East End of North Water Street, that showed elevated gamma levels, were deeper than two feet below the ground surface. Because there is a potential that some of the earth above the tops of the sheet pile retaining wall might have been brought in from another site in the area where there may have been thorium contamination, the boring should go down to the depth of the tops of the sheet pile and then another foot to ensure that there has been no migration of contaminants into a possible, earlier, ground level.

U.S. EPA surveys using the gamma detector attached to the GPS have used a Trimble Pro-XR GPS unit with a MC V datalogger. This system uses real-time differential correction by receiving a U.S. Coast Guard Beacon to achieve an accuracy of < 1 meter for the lat/long coordinates. Any GPS using differential correction has the same level of accuracy. Vertical accuracy is much lower (± 2 meters) and so is generally not used for elevation. Our gamma detector is linked to the MC V datalogger to achieve real-time data collection of the radiation directly linked to coordinates, ensuring that there is no chance of transposing data when entering into a database.

To achieve better accuracy than 1 meter, U.S. EPA's Fully Integrated Environmental Locations Decision Support (FIELDS) group recommends a survey grade GPS with differential correction using a base station. Accuracy for the survey grade is ± 1 cm horizontal and ± 2 cm vertical. When elevation data is needed, this is the type of GPS needed. Our FIELDS's group uses a

Trimble 4400 Total Station but, as with the ProXR, any survey grade GPS will get the same accuracy depending on the type of error correction being used. A sensor like the gamma detector can be linked to this unit as well. Please note we were not successful using GPS over the entire park.

Scope and Objectives, para. 5—If contamination is confirmed at a boring site, it may not be necessary to do any further borings if there is a commitment to excavate until the entire deposit is removed. However, if definition of the deposit is felt necessary, then the number of borings should not be limited to four. In our opinion, step out holes may not be cost-effective. Given the uncertainty of estimating yardage of contaminated material on site characterization borings, U.S. EPA would agree to just begin to excavate until there was no longer any contamination detected.

With downhole gamma logging, the downhole readings will not escape surface influences for 6" - 12". Thus, at 24 inches, there may only be a couple of data points that truly represent subsurface levels. This argues for more depth to be able to make an assertion that there is no buried thorium materials.

Subsurface contamination could be present in more than one strata. For this reason, it would be good to have data down to a depth sufficient to see all potential contamination.

Reporting—A commitment to furnish a report within a specific time period should be made. This might be 30 or 60 days after the borings are completed.

Reporting should include data on soil samples. This should include radionuclide identities, activity concentrations and depths where found. This may aid in establishing whether the contamination can be attributed to specific Potentially Responsible Parties.

Access—In addition to access, a commitment should be made to notify the U.S. EPA well before the start of drilling so that U.S. EPA personnel and contractors have sufficient time to commit staff, to plan and to assemble equipment.

The language of this paragraph can be improved if "...Kerr-McGee or U.S. EPA" is changed to "...Kerr-McGee and U.S. EPA."

Description of Crew—The crew should be appropriate to do borings down to one foot below the top level of the sheet pile.

Health and Safety, para. 1—Reference to "mentally disturbed homeless people" should be removed or replaced with trespassers.

Health and Safety, para. 2—The constituents of concern should not be limited to U-238, Th-232 and their progeny. There is a very reasonable potential for U-235 and its progeny to be present since it is consistently associated with U-238 in natural materials. For high concentration materials, some of the elements in the Actinium Decay Series may have public health consequences.

Moreover, the Argonne National Laboratory analysis of material from DuSable Park identified europium-155 (Eu-155). On one hand, rare earths are known to be significant parts of

monazite ores so Eu-155 could be present. On another hand, Eu-155 has only a 4.96 year half life. It may have been the gamma emission of a more common radionuclide that led to the designation of the presence of Eu-155. Analyses of more samples from the DuSable site could determine if Eu-155 is actually present.

The methods to be used for soil analyses should be specified and described.

Health and Safety, para. 4—Reference to “homeless people” should be removed or replaced with trespassers.

Heath and Safety, para. 7—It is prudent that a plan for a higher level of personal protection was included. Soils analyzed from this site have shown total radium concentrations to over 10,000 picocuries per gram (pCi/g). Soils at these levels should require more personal protection.

Health and Safety, para. 8—Decontamination procedures are not discussed.

There is no specific description of how workers will be frisked. Instrumentation and methods should be included.

Figure 2, Three Investigation Areas—It is unclear why the site is gridded in this figure. The use of GPS equipment means points of interest can be identified by latitude and longitude. It would be good to include text in the report to explain the use of the grid system.

Investigation of Area B should include at least the south slope from the top of the hill down to the end of East North Water Street.

Surface Gamma Survey, Section 5.5—It would seem that the probe would be easier to use if it were perpendicular to the ground.

Surface Gamma Survey, Section 5.6—Grid lines are 10 meter apart. If data is only obtained along grid lines, there may be very little data to use for characterization and defining boring locations. Data should be obtained closer grid lines and should be obtained from within grids as well.

Surface Gamma Survey, Section 5.7—It would aid the characterization if the survey region extended out to some fixed gamma level, such as background, so that multiple anomalies in the same general area would still be investigated. With a fixed radius, the investigation may stop short of delineating the whole problem area.

Surface Gamma Survey, Section 6—The datalogger information on latitude, longitude and count rate for data points should be retained as well. If any maps are generated from this data, they should be retained too.

Downhole Gamma Logging, Section 5.2.1—This equipment should not be limited to manual equipment. For a complete characterization, the equipment may have to be mechanized.

Downhole Gamma Logging, Section 5.3.4—The initial reading should be at the surface, not 3 inches below grade. This would aid the characterization by determining if contaminated deposits were surficial or not.

The text of the Investigation Work Plan should explain why a one-minute count with this small probe will be sufficient to have acceptable accuracy on the count rate measurements.

Downhole Gamma Logging, Section 5.3.5—As mentioned earlier, U.S. EPA would agree to just begin to excavate until there was no longer any contamination detected instead of stepping out additional boreholes.

Downhole Gamma Logging, Section 5.3.6—Gamma logging should go at least one foot below the level of the top of the sheet pile retaining wall onsite. The Borehole Field Log in the Downhole Gamma Logging protocol is already set up to for data every 6 inches, down to 96 inches.

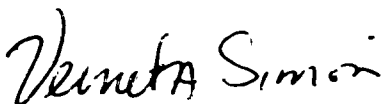
Downhole Gamma Logging, Section 5.3.7—If the gamma logs were reviewed immediately then, if the data indicated, additional and/or compensating actions could be taken while equipment was still in place.

Downhole Gamma Logging, Section 5.4—If feasible, it would greatly improve the survey data if software were used with the GPS equipment to produce maps based directly upon GPS data. This would give an improved map showing bore hole locations. Please note U.S. EPA was not successful using GPS over the entire park.

Downhole Gamma Logging, Section 6—As stated above for the Surface Gamma Survey protocol, "The datalogger information on latitude, longitude and count rate for data points should be retained as well. If any maps are generated from this data, they should be retained too."

If you have any questions about these changes, please contact me at (312) 886-3601 or Fred Micke, On-Scene Coordinator, at (312) 886-5123, or Larry Jensen, Senior Health Physicist, at (312) 886-5026. We would greatly appreciate discussing this letter before November 2, 2001 and would like to see field work anytime after November 30, 2001.

Sincerely,



Verneta Simon
On-Scene Coordinator

cc: Tony Hayes, Chicago Park District

bcc: Mary Fulghum, C-14J
Padma Klejwa, C-14J
Larry Jensen, SE-5J
Mike Joyce, P-19J
Fred Micke, SE-5J
Linda Nachowicz, SE-5J